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The Role of Conduction Anesthesia in the Diagnosis and Treatment of Disease*

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In recent years the use of conduction anesthesia or nerve blocks has come into more general use in the treatment of various disease processes and for the relief of painful disorders.

In 1934 Leriche and Kunlin introduced the idea of interrupting impulses along the sympathetic chain of nerves in the treatment of acute thrombophlebitis. Leriche believed that the segment of vein affected gives rise to vasoconstrictor impulses which disturb the normal resorption of lymph and tissue fluids. The consequent edema, in turn, causes further circulatory disturbances, so that a cycle is set up. His condition was that temporary breaking of the cycle will allow healing to begin.

Ochsner, in his work on acute thrombophlebitis and its successful management, by paravertebral sympathetic blocks, has confirmed this idea. He states that the prognosis in any given case is directly dependent upon the degree of spasm present.

Clinically, regional sympathetic paralysis results in regression of the local symptoms, cessation of pain, fall in temperature, and diminution of swelling.

Treatment by means of sympathetic block should be instituted as soon as the diagnosis is made. When the lower extremity is involved, ten cc of 2% metycain is injected into the sympathetic chain at the first, second, and third lumbar ganglia on the affected side. When the upper extremity is affected, the injections are made into the stellate ganglion on that side. Some patients respond favorably to a single injection, while others require further treatment. Subsequent injections are performed daily; usually three treatments are sufficient. When the fever has subsided, the patient is allowed out of bed. Immobilization and prolonged bed rest are not necessary or advisable where regional sympathetic block is employed.

The incidence of embolism is about 15 per cent in thrombophlebitis treated by bed rest alone. However, when blocking of the sympathetic nerves is employed, the incidence of emboli falls to as low as 3 per cent.

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There has been much discussion in the past several years of the efficacy of blocking the stellate ganglion in cases of cerebrovascular accidents. A number of cases have been reported where all evidence of paralysis has disappeared within twenty-four to forty-eight hours following the use of such therapy. However, to be beneficial, the block should be done within the first several hours following the accident. I realize that there are cases that clear up in this period of time without any specific treatment. Rovenstein has stated that blocking of the stellate ganglion will hasten the return of function in those who might ultimately recover, and will lessen the degree of paralysis in those whose functions will be impaired no matter what form of treatment might be used.

In 1943 Volpitto and Risteen reported the use of stellate block in twelve patients following cerebrovascular accidents. In four of these patients the diagnosis was in doubt as to whether hemorrhage, thrombosis, or embolus was the causative factor. These four patients were either comatose or semicomatose and no history could be obtained. None of them showed any response either immediate or delayed following the interruption of the sympathetic nerves with procain.

Seven patients of this group had occlusions of vessels due to cerebral thrombosis, and one patient had symptoms of cerebral vasospasm. The stellate ganglion, on the side opposite to the one involved, was injected in each patient. The time interval between the occlusion and the injection varied from a few hours to thirteen days. Six patients showed marked improvement objectively and subjectively from five to fifteen minutes following the infiltration of the procain, and then continued to improve gradually until dismissed from the hospital. Two patients did not appear to be improved until about eight to twelve hours later, and then a marked improvement was found.

These reporters emphasize that blocking of the stellate ganglion is definitely contraindicated in the presence of cerebral hemorrhage. However, where thrombotic or embolic phenomina appear in the

cerebral vessels, then interruption of the sympathetic impulses is indicated and may be of great benefit to the patient.

Blocking of the stellate ganglion has been advocated in the treatment of pulmonary emboli. In 1947 Bagent and Rapee reported the use of this therapy on three occasions in two patients. The first patient obtained relief, almost immediately, of bilateral chest pain on two separate occasions, although the stellate block was done only on the side of the infarction. He also had relief of severe dyspnea and orthopnea. The second patient was not in extremia, as was the first, but she, too, experienced relief of pain, chest constriction, and dyspnea that was not afforded by the use of opiates.

This therapy was instituted on the premise that pain impulses are transmitted by way of the sympathetic nervous system. This fact has been accepted by many in recent years as a definite entity. It is possible that the pulmonary embolus causes reflex vasopasm of the pulmonary vessels of not only the lung affected, but of the vessels of the opposite lung as well. This spasm initiates painful impulses that are mediated by the sympathetic fibres innervating these vessels. These painful impulses plus vasospasm could account for the severe chest pain, dyspnea, orthopnea, chest splinting, and resultant shock seen in patients having a severe pulmonary embolic syndrome.

In addition to reflex vascular spasm of the pulmonary vessels, there may also be a regional sympathetic spasm of the coronary vessels as well, regardless of the pulmonary involved, whether it is right or left. This permise would also explain the bilateral chest pain that may occur and the frequent cardiac irregularities found in many of these cases.

The use of stellate block is recommended in the treatment of coronary occlusion. Here again the object is to relieve the spasm of the coronary vessels, increase the blood supply to the heart, and to ease the pain and anxiety of the patient. This, in turn, increases the respiratory exchange and the oxygen consumption. The cyanosis and dyspnea is thus alleviated, and the patient is made more comfortable.

Interruption of the sympathetic impulses in the cervical region is used as a diagnostic procedure. Let me give you an example. A 35-year-old colored single male was admitted to the hospital on January 11, 1952, with a chief complaint of swollen right arm. His past history was negative as to injury or illness. However, he had been a heavy drinker and had consumed about a pint of whisky every night for several weeks. The night before admission he drank a lot of rubbing alcohol. When he woke up his right arm was markedly swollen and felt numb. A little later he began to have pain. He worked as a common laborer, but gave no history of any injury.

Physical examination revealed a very well built, muscular colored male in good physical condition except for marked swelling of the entire right arm with several small blisters on the medial aspect of the upper arm and the lateral chest wall. No radial pulse was palpable and there was marked coldness of the hand extending up to the mid forearm.

Soon after admission to the hospital, a block of the stellate ganglion on the affected side was accomplished, using 1% metycain. There was immediate warming of the extremity and return of a full radial pulse. A dorsal sympathectomy was performed the following morning with subsequent diminution in the swelling of the arm. He was discharged from the hospital on February 2nd much improved.

During the past ten years much interest has been taken by anesthesiologists in the use of conduction anesthesia for the obstetrical patient. Hingson and Edwards, in 1942, proposed the use of continuous caudal anesthesia for deliveries. Due to technical and personnel difficulties, this procedure has been relegated to the larger medical centers.

However, this method of conduction anesthesia has a definite place in the armamentarium of the anesthesiologist. As a means of producing prolonged blocking of the sympathetic nerves of the lower extremities, it is a great aid.

Acute thrombophlebitis responds well to this method of blocking the lumbar sympathetics. Using the catheter technic, anesthesia may be maintained for a number of hours and, in some instances, obviate the need for repeated blocks, as is sometimes necessary when the paravertebral route is followed.

Intractable pain in the pelvic region may be relieved by continuous caudal analgesia. Perirectal cellulitis and abscesses may be rendered painless in the preoperative stage. Pain from ureteral calculi may be relieved by caudal block. The pain of sciatica is sometimes relieved by this procedure. Large doses of saline are sometimes injected into the caudal canal in an attempt to release adhesions about the sacral nerve roots.

Trimble and Morrison have emphasized the fact that intractable pain of visceral origin can often be relieved by interruption of the sympathetic nerve impulses. Blocking of these nerves will often determine whether permanent interuption by surgery is indicated.

Experience has shown that we often fail to relieve pain by diversion of the somatic nerves. However, if pain is present in an extremity, for instance, and affects there the distribution of a cerebro-spinal nerve, as in causalgia, it can be made to disappear if the condition of the peripheral circulation is altered either by infiltration with procain or the actual severances of the sympathetic nerves supplying the part. The anesthetizing of one system abolishes the pain that affects the other.

Eclampsia is another disease entity which has attracted the interest of anesthesiologists. Although the pathologic and physiologic process of this disease is poorly understood, it is thought that spasm of the terminal arterioles, especially in the kidneys, is a big

factor. Realizing that conduction anesthesia is used in the treatment of ischemia occurring in other pathologic conditions, Dr. P. C. Lund suggested its use in eclampsia. He reported the use of conduction anesthesia in the treatment of 22 patients. Sub-arachnoid block was mployed in all cases. Following induction of anesthesia there was (1) a marked decrease in blood pressure; (2) cessation of convulsions; (3) increase in the output of urine; and (4) relief of headache, visual disturbances, and anxiety.

During the past year Marmer has revaluated the use of sciatic nerve block as a means of producing vasodilitation in the lower extremity. It has been shown that the arteries of the extremities receive their nerve supply mainly from the peripheral spinal nerves, and, that in the lower extremities, the sciatic nerve carries the bulk of the sympathetic nerve supply.

He performed a comparative study of sciatic nerve blocks as compared to paravertebral lumbar sympathetic ganglion block. One approach was just as effective as the other. It was felt that, technically, blocking of the sciatic nerve was easier than the paravertebral route.

The use of nerve block for surgery has long been in use, especially in the debilitated and poor risk patient. There is today an attempt being made to relieve postoperative pain by the utilization of longer acting local anesthetic agents in producing nerve blocks. Nupercain-in-oil, and, lately, efocaine, have been of great help in this regard. Blocking of the intercostal nerves has aided materially in the early ambulation of patients following chest and abdominal surgery. These procedures have greatly decreased the need for large doses of narcotics post-operatively, and have speeded the recovery of patients. The incidence of complications has decreased, as has the length of time required for hospitalization.

Intercostal block is advocated in the treatment of fractured ribs. It is felt that strapping of the chest can be a dangerous procedure in some cases because of the possibility of pushing a fragment of bone through the pleura and thus producing a hemothorax.

During the second world war, there was an army directive sent to all medical officers instructing them to inject novocain locally into all sprains. This method of anesthesia can also be utilized for the reduction of fractures. Blocking of the brachial plexus is most expedient when fractures occur in the arm. Occasionally we see patients with severe cardiac disease who become dyspniec upon lying down, and any general anesthetic would be, to say the least, hazardous. However, these patients, too, suffer from fractures which have to be reduced painlessly.

In 1943, Tovell suggested the use of intravenous procain in 0.1% concentrations for transporting injured soldiers and during painful dressings as in the case of burns.

It is evident from these illustrations that research is proving that the anesthesiologist is no longer just a member of the surgical team, but is also a consultant who can help the general clinician in his diagnosis and treatment of disease.

The Mechanisms of Acid Base Balance of Clinical Significance*

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Mr. Chairman, members of the South Carolina medical association and guests. Always, it is a great pleasure as well as a high privilege to be invited to address a group of one's colleagues. On this occasion it is particularly so, because I have had the good fortune to know long and well one of your distinguished members and his delightful and fascinating descriptions of South Carolina have brought me here with more than ordinary anticipation. In addition the renowned independence of spirit which is such a typical and characteristic feature of your people constitutes an inescapable challenge to one's evangelical propensities to attempt to arouse some intellectual indigestion or even actual rebellion against the widespread and unnecessary abuse of parenteral fluid therapy.

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INTRODUCTION

The mechanisms of acid base balance of clinical significance comprise all those physical and chemical processes whose dynamic equilibrium satisfy the fastidious and exacting demands of the cell for a relatively stable and constant cellular environment upon which depends cellular activity and even cellular existance. The cellular environment of course is the extra cellular fluid, and this constitutes a highway over which must pass all materials going to and coming from the cell. It is not particularly surprising therefore to find that the traffic on this road is governed by many alert and instantly available regulatory

mechanisms. Indeed, unless this were true, all the innumerable and interrelated processes whose aggregate constitute metabolism would soon rapidly and disastrously fall out of adjustment. This dynamic equilibrium in the interplay of so many complex and dissimilar forces had its origin somewhere in the neighborhood of 500 million years ago. As is well known to you, potassium constitutes cell base, and sodium represents the principal mineral in the extracellular fluid. It is interesting to point out that in those waters now bathing the earth's crust, such as the Pre-Cambrian Shield, which correspond to the Geological Conditions when life began, more potassium is present than sodium, and therefore one might expect potassium to be more abundant in cells.

With the progressive weathering of the rocks, more and more sodium was washed into the sea, and eventually it came to exceed all other minerals. Therefore, when the vascular tube first sealed off in Cambrian time, sodium was the dominant mineral in solution and the electrolyte ratios in Cambrian sea water are now perpetuated in those of Mammalian Blood Serum. The similarities in different species is illustrated by chart # 1 from MacCallum.[1]

	Na	K	Ca	Mg
Ocean Water	100	3.6	3.9	12.1
Serum (human)	100	6.1	2.7	0.9
Dog	100	6.9	2.5	0.8
Cod	100	9.5	3.9	1.4
Crab	100	3.7	4.9	1.7
Jelly Fish	100	5.2	4.1	11.4

THE SIGNIFICANCE OF THESE ELECTROLYTE RATIOS ON THE BASIS OF THEIR PHYSICAL CONFIGURATION

The physical relationship of these electrolyte ratios to one another is frequently forgotten, but in view of the fact that these ratios represent an inherited endowment of 500 million years, it would be difficult to exaggerate their importance. Certainly, if sodium ions are in excess, cell activity is disturbed, and a similar situation occurs if any other electrolyte is in the ascendent. A good way to keep this organized in one's mind, is to recall how Sydney Ringer the emminent English Physiologist, in the early 1880's discovered the solution which now goes by his name. Ringer while working with perfusions of frog hearts noticed that if the perfusion fluid was isotonic sodium chloride, the frogs heart came to rest in about 10 minutes and could not be started.[2]

A most perplexing difficulty was that sometimes the heart would beat much longer than at other times. Through a series of fortuitous circumstances, he discovered that in those hearts which beat the longest, the lab boy had failed to distill the water with which the solution was made. Immediately Ringer realized that there were some minerals in the water which were beneficial, accordingly he added calcium which gave him prolongation of diastole and then if he added potassium, he got a reasonably normal beat. This balanced mixture of course is now known as Ringer's solution. The point is, these ions—sodium, potassium and calcium have a counter balancing action on one another, which is completely independent of any chemical effects their salts may have. Ringer was well aware of the fact that it did not matter whether he used potassium sulfate or potassium chloride or potassium phosphate. The important thing was the potassium, and the calcium. Ringer actually anticipated from a physiological experiment the electrolytic dissociation theory of Arrhenius which was not published until 1887.

THE CHEMICAL RELATIONSHIP OF ELECTROLYTES

The chemical relationship of electrolytes illustrate another facet of this relationship. It has been known for a long time that the reaction of the body fluids must be slightly on the alkaline side, and that any actual acidity is not compatable with life. Therefore one means by an acidosis, not an actual acid condition of the blood or extracellular fluid, but a decreasing alkalinity. It should be made crystal clear at this particular time, that in modern clinical practice the term acidosis has two meanings, and alkalosis has two meanings. Acidosis means a decrease in the PH and a decrease in the amount of bicarbonate reserve. Now alkalosis means an increase in the PH or an increase in the bicarbonate reserve. Nearly always they move in the same direction at the same time. The important exceptions are hyperventilation, hibernation and emphysema. There is a very interesting historical background to these ideas, which is particularly pertinent to the subject under discussion.[3]

In 1874 Kussmaul pointed out the clinical similarity between diabetic and uremic coma. In 1877 Walter gave large amounts of hydrochloric acid to rabbits and found that the amount of sodium bicarbonate in their blood was proportional to the amount of acid given, and their clinical condition could be alleviated by giving sodium bicarbonate. In 1883 Stadelmann suggested that people in diabetic coma were like the rabbits of Walter. Accordingly a search for acids in the urine revealed them to be present, and bicarbonate solutions were used therapeutically.

Subsequently, developments came quick and fast. But it is salutory for clinicians to remember that these concepts originated in the laboratory, and were only later and subsequently recognized in clinical medicine. The PH being a ratio between the acid elements and base elements, has been found to have a relatively small use in clinical medicine. But in the final analysis the PH of course is the sole arbiter.

From now on when we use the word acidosis we mean a decrease in the amount of available bicarbonate in the blood and by the same token by alkalosis, we mean an increase in the amount of bicar-

bonate in the blood. For example we will illustrate this with the following formula.

Eg. $HCL+NAHCO_3 = NACL+H_2O+CO_2$

Therefore, one may see from this formula that the introduction of HCL into the plasma has used up some of the bicarbonate, with the formation of sodium chloride, a neutral salt, with no serious disturbance in the reaction of the blood. But the point to remember is that you now have less sodium bicarbonate than you had before, and therefore according to the definition you have an acidosis. On the other hand, if you introduce an alkalae like sodium hydroxide then plus the ubiquitous, and at all times available CO_2 one gets sodium bicarbonate and now you have more sodium bicarbonate than before, therefore:

Eg. $NaOH+CO_2 \rightarrow NaHCO_3$—you have an alkalosis.

It seems very much in order to point out at this time that notwithstanding the fact that this representation may be an over simplification, it is still of the very greatest clinical assistance, and its continuous use will demonstrate its immeasurable value.

Always, in medicine one has been taught the importance of having an anatomical or morphorlogical basis for the concepts of disease and this is as it should be. However, there are an increasing number of conditions in which no anatomical lesion can be recognized. But the principle is so sound, that in the case of acidosis, alkalosis dehydration, etc., one can substitute simple chemical diagrams as a basis for their concepts.[4]

The following is the Diagram of the Normal Plasma Pattern.

Quantities expressed in milli equivalents.

Chart #2

Na 142	HCO_3 27
	CL 103
K 5	PO_4SO_4 3
Ca 5	Proteins 16
Mg 3	Organic Acids 6

In all humility, one can assure anybody but an expert in this field that to remember this diagram, permits the ready objective visualization, and instant understanding of any disturbance of acid base balance that he is likely to run into. There is a great feeling among the profession that it cannot be as simple as this. But, nevertheless, this is a key which will unlock any clinical difficulty that one may meet in this field. A few characteristic patterns are illustrated here. These charts are simple arrangements of possible plasma derangements. They are solely for the purpose of illustrating their usefulness. They are constructed after those of Gamble.[5]

Chart #3

Na 142	HCO_3 37
	CL 93
K 5	SO_4 PO_4 3
Ca 5	Proteins 16
Mg 3	Organic Acids 6

VOMITING

Loss of 10 milli equivalents of chloride increase by HCO_3 therefore, alkalosis

Chart #4

Na 142	HCO_3 20
	Ketonic Acids 7
	CL 103
K 5	SO_4 PO_4 3
Ca 5	Proteins 16
Mg 3	O. A. 6

DIABETES

Ketonic acids to the amount of 7 milli equivalents appear in the plasma and corresponding decrease in HCO_3

Chart #5

Na 142	HCO_3 17
	CL 105
K 5	SO_4 PO_4 11
Ca 5	Proteins 16
Mg 3	Organic Acids 6

Nephritis

Here Cl SO_4 and PO_4 to the extent of 10 milli equivalents are retained in the plasma as a result of renal insufficiency. Corresponding decrease in the HCO_3

Chart #6

Na 142	HCO_3 35
	Ketones 8
	CL 87
K 5	SO_4 PO_4 3
Ca 5	Proteins 19
Mg 3	Organic Acids 3

Duodenal Obstruction

Here one sees severe vomiting in presence of starvation Ketones in plasma, to extent of 8 MEq but a loss of 16 MEq of CL and increase in HCO_3 by 8MEq. Therefore, a ketosis in the presence of an alkalosis.

CONSERVATION OF BASE

The conservation of base is essential to the well being of an organism because the acid radicals from an ordinary diet greatly exceeds the intake of fixed base. Therefore the mechanisms for its conservation must be briefly enumerated.

1. The synthesis of ammonia by the kidney, and its excretion in place of sodium. Thus ammonium chloride goes into the urine instead of the sodium chloride.

2. The ion exchange mechanism so beautifully described by Pitts, in which the Di Sodium Phosphate is changed in the kidney to Di Acid Sodium Phosphate. Eg. Na_2HPO_4 to NaH_2PO_4.

3. The ability to spill organic acids in a certain proportion into the urine without covering base.

and finally,

4. The excretion of an acid urine in the presence of an alkalosis in dehydration, illustrating in a very pointed fashion that the body conserves the level of the fluid in the body more efficiently than the reaction of the fluids.

REGULATION OF WATER BALANCE

The regulation of water balance or fluid volume in the body, depends upon the integrated functional activity of the kidney, adrenal cortex, pars nervosa and an adequate intake of sodium.

The distribution of the water in the body is, according to Gamble[5] approximately 5% is in the blood plasma, 15% in the rest of the extra-cellular fluid and 50% in the intra-cellular fluid.

The amount of water utilized by the body in 24 hours, according to Gamble[5] reaches the surprising volume 8200 cc, with the following composition:

Saliva	1500 cc
Gastric Juice	2500 cc
Bile	500 cc
Pancreas	700 cc
Intestine	3000 cc
	8200 cc

In view of the fact that the fluid volume of the blood is of the order of 3500 cc, it is easy to see that over 2½ times the total blood volume is utilized each 24 hours.

Therefore, the reabsorbtion of these fluids becomes a matter of critical importance. This explains the well known clinical fact that diarrhea and vomiting most rapidly deplete the body fluids. The importance of sodium's crucial position in maintaining the fluid volume level is well illustrated by Chart #7 by Gamble and McIver. From Gamble[5] In this experiment an external pancreatic fistula provided for a continuous loss of sodium. The dogs were given all they wanted to eat and drink except sodium. As you will see, no significant change occured until the 11th day, except for a continuous loss in weight. Then, suddenly, when the reservoir of extra-cellular fluid was empty and no source to maintain blood volume was available plasma protein concentration increased. This was soon followed by death on the 13th day from dehydration, even in the presence of an abundant fluid intake. This fluid could not be retained however, because of a lack of sodium.

EFFECTS OF CONTINUED LOSS OF PANCREATIC JUICE.

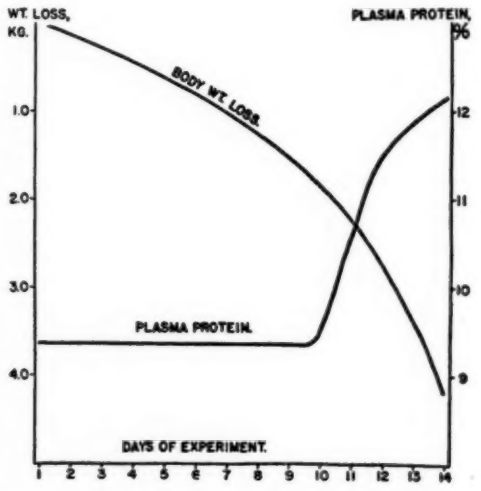

Chart #7.

TREATMENT

The treatment of disturbances of acid base balance can be summarized very succinctly.

Sodium chloride solutions will repair any defect of the plasma except a ketosis and low plasma potassium levels. Sodium and chlorine are metabolised separately. If a patient is vomiting chloride and you give sodium chloride, the chloride is retained and the sodium is spilled by the kidney. If an infant has severe diarrhea with a loss of base, the body retains the sodium and excretes the chlorine.

In the interesting condition of low potassium in the presence of alkalosis which has been described by McQuarrie[6] in Cushing's Syndrome it is essential to add some potassium salts. At this particular point it is of the utmost importance to point out that low potassium levels cause a good deal of trouble and should be rectified whenever possible. But they rarely die from this condition. On the other hand hyperpotassemia is a real formidable danger. And it is sure that 10 milli-equivalents is lethal. So when in doubt do not give potassium. Nearly always the electrocardiograph will tip off the proper procedure to be employed. Now as to the question of glucose therapy a simple rule can be laid down. When glucose is given intravenously, 5 things happen:

1. Some spills by the kidney.
2. Some is converted to glycogen. This is indeed a small proportion.
3. Some is converted to fat.
4. Some is stored by the skin. What Cannon called storage by inundation.
5. An appreciable proportion of the glucose is metabolized to carbon dioxide and water.

This water in the blood stream without covering base through a mechanism which is to be discussed tomorrow, inhibits the formation of the antidiuretic hormone. This combined with the fact that when glucose is at or above the ceiling of its reabsorbtive capacity in the kidney, the mechanisms for sodium reabsorbtion are in some measure less efficient. The result is some sodium is lost in the urine because of the presence of the high glucose. These two mechanisms explain why glucose is a diuretic. However, if one puts the glucose in a solution of saline only the glucose gives the free water which after all is very small. It is the water with the glucose which is so useful in supplying the physiological requirements and therefore, no purpose is served by this procedure which is such a widespread error in practice. Indeed, this cannot be insisted upon too much, as has been so pointedly mentioned by Gamble.[7]

Therefore, one can lay down the rule that glucose solutions have as their sole therapuetic value:

1. To act as a diuretic, to reestablish any disturbance of electrolyte ratios that result from renal inefficiency.
2. To supply the body with its daily requirements of physiological water. Under no circumstances can the pathological loss of fluids from vomiting diarrhea, etc., be replaced by glucose solutions.

Glucose solutions have a protein sparing effect and to a lesser extent a sodium sparing effect also, so that one can approach treatment confidently by remembering these two simple rules. This explains why many patients are intelligently treated without any clear understanding of the precise derangement that is present.

SUMMARY

1. Potassium is the principal cell base in both plant and animal forms.
2. Sodium is the extra-cellular base in all animal forms.
3. Sodium, potassium, calcium and magnesium have a counter balancing neutralizing action upon one another entirely upon the basis of their physical configuration and independent of any chemical quality.
4. In clinical terms, acidosis is a decreasing alkalinity and alkalosis an increasing alkalinity.
5. The Conservation of Sodium is carried out by four very efficient mechanisms.
6. The fluid volume level in the body is maintained by the functional intergration of the kidney, pars nervosa, adrenal cortex and the adequate intake of sodium.
7. Sodium chloride solutions will repair any defect in the plasma except a ketosis and low plasma potassium and glucose solutions should be rigidly restricted to the physiological requirements of the body for water as a diuretic. To replace the pathiological loss of fluids, sodium chloride solutions are essential.

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Hemochromatosis Complicated by Congestive Heart Failure and Severe Anemia: Report of Case

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In the past, hemochromatosis was not generally considered a cause of congestive heart failure. In recent years, however, more cases of hemochromatosis associated with congestive heart failure are being reported.

Report of Case

The patient, a farmer from Iowa 61 years old, came into the hospital on January 7, 1952, because of debility, dyspnea and progressive weakness. He had been well enough to carry on all the duties of his occupation until three years previously, when weakness, dyspnea on exertion and swelling of the legs had begun. Within a month or two he was unable to work and was hospitalized near his home. It was discovered that he was severely anemic and he received five transfusions in a week. There was no history of loss of blood. Injections of liver extract were begun and continued at intervals of a week until admission to the Mayo Clinic but no more transfusions were given. Although the patient felt better after the transfusions, he never regained his usual health and vigor. He continued to complain of weakness, his tolerance of exercise was low and there was some swelling of the feet and legs most of the time.

During the two or three months prior to admission to the clinic his condition had deteriorated further, weakness had increased and dyspnea appeared on the slightest exertion. Pain of an anginal nature began and was associated with the exertional dyspnea. The edema became more massive and after recumbency showed in his face about his eyes, as well as in the lower portion of his body. He complained of fullness in the upper part of the abdomen, a loss of appetite and inability to sleep because of cough and dyspnea. Some generalized itching had been present since the onset of his illness and in recent weeks this had become very annoying. He had not known of any jaundice though his family commented on his bad color. He gave no history of hypertension, rheumatic fever, syphilis, loss of blood or of previous myocardial infarction.

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On examination at the clinic the patient appeared chronically ill and debilitated. He talked with difficulty because of dyspnea. The skin and mucous membranes were pale, but over the face and arms particularly there was hyperpigmentation of a dirty brownish gray type. The patient was edematous about the eyes and had massive pitting edema up to the sacral level. The skin showed numerous scratch marks.

The heart was enlarged, so that the apical impulse was felt in the sixth intercostal space well outside the left anterior axillary line. The heart tones were feeble and weak. The rhythm was regular, and the rate was 80 per minute. There was an inconstant apical systolic murmur, but no other abnormal sounds were heard. The lungs showed moist rales over both lower pulmonary fields.

On examination of the abdomen, a moderate amount of ascites and massive enlargement of the liver were noted. This organ extended to the level of the iliac crest; it was firm, had a sharp edge, a smooth surface and was not tender. The deep tendon reflexes were generally hypoactive.

The initial laboratory tests revealed the following values and findings: 4 gm of hemoglobin per 100 cc. of blood; 1,260,000 erythrocytes per cubic millimeter of blood; a slight amount of albumin in the urine; sedimentation rate of 83 mm. in one hour (Westergren); 40 mg. of urea and 120 mg. of sugar per 100 cc. of blood; negative result of the Kline test; no direct reacting serum bilirubin and 1.2 mg. of the indirect reacting type; 5.52 gm. of protein per 100 cc. of serum with 3.31 gm. of albumin and 2.21 gm. of globulin. An electrocardiogram showed no significant abnormalities.

The patient initially, then, presented evidence of advanced congestive heart failure, associated with severe anemia of long standing, a large hard liver, pruritus, and a peculiar type of pigmentation of the skin. Why the congestive heart failure was present, and the nature of the anemia were obscure.

Special blood smears were made and reviewed by consultants on diseases of the blood. They showed

marked anisocytosis and poikilocytosis with hypochromasia, some target cells and scattered macrocytes. Polychromasia and fairly abundant normoblasts were noted. Examination of the sternal marrow showed that the principal cells in the preparation belonged to the normoblastic line, the majority being basophilic normoblasts. Many reticuloendothelial cells were present some of which contained hemosiderin. Myelopoiesis was not remarkable. Examination of the stool failed to show occult blood and the value for fecal urobilinogen was within normal limits. The bromsulfalein test of liver function was normal, there being no retention of dye.

Roentgenograms of the thorax confirmed the impression of marked cardiac enlargement. Roentgenologic studies of the stomach, duodenum and colon with the aid of barium failed to show any potential source of blood loss or any other abnormality.

In the way of symptomatic treatment the patient was cautiously given transfusions of whole blood. He was at the same time digitalized, placed on a dietary program of moderate restriction of sodium, and was given mercurial diuretics in standard doses. These measures resulted in prompt diuresis, and the patient lost a total of 18 pounds (8.2 kg.) in the course of two weeks. He became ambulatory and got about the hospital without distress. His nights were much better and he could lie flat.

Though the edema and ascites disappeared, the liver changed little in size or consistency. Because of the hyperpigmentation and the large firm liver with good function as measured by the dye excretion test, hemochromatosis was suspected. On January 21, 1952, a transabdominal needle biopsy of the liver was done. The pathologist reported finding hemochromatosis and cirrhosis and confirmed our suspicions. Biopsy of skin of the left forearm also contributed to the diagnosis of hemochrocatosis.

The patient was dismissed. At that time the congestive heart failure was under control and the value for hemoglobin was 9.7 gm. per 100 cc. of blood; this level of hemoglobin was attained by transfusion, but without a satisfactory understanding of the nature of the anemia.

On March 11, 1952, the patient returned for reevaluation. He had done fairly well on a program of limited activity until two weeks before his return, at which time he began to feel weak; dyspnea returned as did the edema of the feet and legs. He again denied any evidence of loss of blood. The pruritus of which he had complained on his previous visit had subsided.

The physical examination was as on discharge from the hospital except for a moderate degree of dependent edema and puffiness about the eyes. The patient was again pale despite the abnormal pigmentation. The pulse rate was 100 per minute and regular, the heart was enuarged, and the lungs showed only minimal evidence of congestion. The condition of the liver was unchanged.

Laboratory findings of significance included: glycosuria, grade 1, 130 and 139 mg. of blood sugar per 100 cc. on two separate occasions on fasting; 4.8 gm. of hemoglobin per 100 cc. of blood; 1,150,000 erythrocytes; no direct reacting serum bilirubin and 1.2 mg. of the indirect type; hydrochloride acid was found in gastric contents after administration of histamine; reticulocyte counts were 0.3 and 0.4 per cent. Results of the antiglobulin developing test were negative; the stool was negative for occult blood. Examination of smears of the peripheral blood disclosed the same condition as on the previous visit.

The patient again had a satisfactory diuresis after administration of mercurials and the edema largely disappeared. He received two transfusions of 500 cc. of whole blood. He was given an appropriate diet for diabetes and appeared not to require insulin. When he was dismissed, he was feeling better, but the degree of his improvement was not so great as on the first visit.

Comment

Hemochromatosis is generally recognized as a metabolic disease characterized mainly by abnormal retention and deposition of iron in the form of hemosiderin throughout the body. The main pathologic features are the deposition of pigment, which shows an affinity for glands, the presence of fibrotic changes and cellular degeneration; the last is the least impressive finding. Hemochromatosis presents ordinarily as a clinical triad of abnormal skin pigmentation, diabetes mellitus and enlargement of the liver.

Although the metabolic nature of the disorder as championed by Sheldon[1] is generally accepted, Gillman and Gillman[2] have suggested that the condition which they referred to as "cytosiderosis" is related to a deficiency state. Their conclusions are drawn from biopsy of the liver on malnourished Africans with pellagra, and they concluded that the source of the abnormal iron is the mitochondria of the parenchymal cells, which have been adversely affected by the deficiency state. They stated that hemochromatosis is a rather common complication of pellagra in Africans.

Previously detailed reports of cases of hemochromatosis in which the main manifestations were cardiac have appeared in the literature.[3-6] From other reports, not presented primarily as examples of heart disease, it is apparent that the cardiac involvement was a significant part of the process.[7-10] No longer is hemochromatosis considered a rare disease; more than 400 cases are reported in the literature. Of this number perhaps a dozen are predominantly cases of severe heart disease attributable to hemochromatosis.

In his monograph, Sheldon[1] stated that the heart was a site of deposits of hemosiderin in 90 per cent

of cases in which necropsy was performed. However, he did not list heart disease as an important clinical manifestation or cause of death in hemochromatosis.

Blumer and Nesbit,[3] reviewing the French literature, discussed the so-called endocrinohepaticocardiac syndrome. The main features of this are an age incidence definitely below the average for the disease, involvemnt of endocrine glands (particularly testicular atrophy), infantilism as a part of the clinical picture, and frequently death from apparent cardiac failure. The pathologic changes in the heart as reported in such cases are meager and the French propose that the cardiac failure is produced by endocrine effects rather than by myocardial damage secondary to the abnormal deposits of pigment.

The majority of cases reported in the English literature in which heart failure is a prominent feature does not seem to fit into this syndrome. Furthermore, in the cases coming to necropsy the hearts generally showed myocardial changes which seemed adequate to explain the failure. The hearts of persons with hemochromatosis who died of cardiac failure were generally reported to be enlarged. Brownish pigmentation was present, and the muscle was frequently described as soft and flabby. Microscopically there was intense infiltration of pigment in and about the muscle cells. In some areas the muscle substance appeared to be entirely replaced by the iron-containing pigment. Some hearts showed predominantly a replacement fibrosis; others showed little fibrosis but varying degrees of degenerative changes with fragmentation and lysis of the myofibrils. Some investigators have expressed the opinion that the heart failure is solely due to the damage of the heart muscle by the deposition of the pigment in the heart muscle resulting in marked fibrosis. Others consider that heart failure is due to endocrine disturbance. This latter school of thought cites cases of hemochromatosis in which the heart contains large amounts of pigment and the hearts have not failed. We favor the idea that both factors are causes of heart failure, as they apparently were in our case. There were no other etiologic factors apparent to produce heart failure, and the diagnosis seemed positive, with the clinical triad of diabetes, pigmentation of the skin, and enlarged liver, which on biopsy showed extensive deposits of hemosiderin and cirrhosis. The presence of pain in the thorax is not disconcerting because in the cases in the literature an anginal pain, and in one instance pain suggestive of myocardial infarction occurred with normal coronary arteries being found at necropsy.

Our patient responded well to the usual treatment for congestive heart failure. However, our period of observation is brief.

A more puzzling diagnostic and therapeutic problem in our case was the status of the blood. Anemia is not ordinarily a characteristic of hemochromatosis. In only 6 of the 311 cases reviewed by Sheldon[1] was the erythrocyte count less than 2,500,000. Anemia was not present in the series of Butt and Wilder,[11] although macrocytosis was found in 3 cases.

There are scattered reports in the literature of the occurrence of severe anemia with hemochromatosis. Chesner[12] described the mase of a 14-year-old boy who had had anemia for six years and for whom splenectomy was done for suspected Banti's disease. This patient was said to have a hypochromic microcytic type of anemia with a hyperplasia of the erythroid elements in the sternal marrow. He was not benefited by splenectomy and the effect of blood transfusion was short-lived. This patient did not have pigmentation of the skin or diabetes and the diagnosis of hemochromatosis was not established until necropsy.

Zeltmacher and Bevans[13] reported the case of a man, 65 years old, who had dyspnea and edema and a severe anemia which required transfusion. The bone marrow was cellular and showed an increase in normoblastic activity; hemosiderin was present in the reticular cells. There was no evidence of loss of blood and the anemia failed to respond to injections of liver and iron. The patient died of anemia and heart failure, and the diagnosis of hemochromatosis was established at necropsy. These authors commented on several other cases of refractory anemia associated with hemochromatosis and expressed the belief that the relation between the two diseases is more than coincidental.

Bomford and Rhoads[14] in their extensive report on refractory anemias stated that in the "pseudo-aplastic" type of anemia (with a relatively normal marrow) pigmentation of the skin sometimes occurs as a complication and less frequently hemochromatosis. They described 3 cases of hemochromatosis associated with refractory anemia. One of these patients had received fifty-four transfusions and the others "not an exceptional number." It appears that hemochromatosis can develop as a complication of severe refractory anemia.

The distinction between advanced hemosiderosis and hemochromatosis is not always absolute. Reports of approximately 40 cases of transfusion siderosis have appeared in the literature; these are mostly cases of pernicious anemia, refractory anemia and chronic leukemia. Schwartz and Blumenthal[15] discussed the problem of exogenous hemochromatosis resulting from transfusion of blood. In the cases cited from twenty-one to 290 transfusions had been given.

The stores of iron in the normal body are about 5 gm., more than half of this being in the hemoglobin. In cases of well-developed hemochromatosis the body contains 25 to 50 gm. or more of iron. The average amount of iron in the usual transfusion is about 250 mg. Thus it is seen that an enormous number of transfusions would be required if this were the only source of excess iron in "transfusion hemochromatosis."

In the absence of blood loss there is no avenue of escape for the body's stores of iron. The loss of iron

through pregnancy and menstruation probably accounts for the lesser incidence of hemochromatosis in the female. Recently there has been reported by Davis and Arrowsmith[16] beneficial results from repeated phlebotomies in patients with hemochromatosis.

In our case, the anemia seemed definitely not related to loss of blood and we could not produce any evidence of abnormal hemolysis. Since the marrow was normal or actually hyperactive in appearance, without maturation arrest, the anemia has to be regarded as an achrestic or adynamic type of anemia, the ultimate cause of which is not at all known.

Although we were aware of the fact that the patient's stores of iron would be slightly increased by transfusion and thereby possibly the hemochromatosis made worse, there seemed no alternative but to give blood. We made no attempt to curtail the dietary intake of iron.

Summary

In the case of hemochromatosis presented severe congestive heart failure was complicated by refractory anemia. The diagnosis of hemochromatosis was established during life by liver biopsy. The literature on heart failure and anemia occurring in hemochromatosis was considered.

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CANCER

Edited by JOHN C. HAWK, JR., M.D., Charleston, S. C.

CARCINOMA OF THE PENIS

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In 1931 Lewis[1] observed that cancer of the penis constituted almost ten per cent of the malignancies of the genito-urinary tract admitted to The Brady Urological Institute of the Johns Hopkins Hospital. Horn and Nesbit[2] noted in 1934 that approximately 225 deaths occur in the United States each year as a direct result of cancer of the penis. Certainly it occurs with sufficient frequency to warrant careful evaluation of the means of treating this malignancy.

Procedures of varying magnitude have been reported in the literature as the operation of choice for cancer of the penis. These encompass, at the extremes, a simple amputation with a reasonable margin of grossly uninvolved tissue, and the classic radical operation of Hugh Young comprising total amputation of the penis together with en bloc dissection of the inguinal and femoral lymphatics and of the scrotum and its contents. In the passage of time since 1907 when Young reported his operation, urologists have come to accept simple amputation as adequate in selected early cases and to feel that Young's operation is unjustifiably radical insofar as emasculation is concerned and insufficiently radical when the cancer has metastasized to the regional lymphatics. Furthermore, the classic Young abdominal crescentic incision has resulted in primary healing in few cases, thereby necessitating prolonged hospitalization while the wound heals by second intention, resulting in greatly increased expense, either to the patient or to the supporting agency. For the above reasons, the writer has been dissatisfied with the so-called radical operation and five years ago abandoned it for the procedure which is subsequently described and which has resulted in a significant decrease in the length of hospitalization in most cases.

PATHOGENESIS

Cancer of the penis arises from the glans penis and is to be differentiated from carcinoma of the urethra which is rare and which has recently been thoroughly considered in a report by McCrea.[3] Carcinoma arising from the glans penis is invariably squamous cell or epidermoid in character. The neoplasm is usually of grade I or II activity according to the classification of Broders and metastasizes relatively late as compared

Figure 1. Photograph of surgical specimen showing ulcerating carcinoma of the penis.

to other malignancies. The early lesion may appear as an ulceration with a raised, rolled edge (Figure 1) or it may be a protruding, fungating, cauliflower-like growth (Figure 2). Either type spreads by direct extension, eroding and eventually destroying the glans penis and penile shaft. Metastasis is by the lymphatics to the inguinal and femoral chains, and subsequently to the iliac and periaortic systems, terminally involving the mediastinal lymph nodes. Rarely is there blood-borne metastasis, although we have seen one case in the Cancer Clinic in which there were peripherally located pulmonary metastases simulating those from clear-cell carcinoma of the kidney (hypernephroma). Even more rarely, metastasis takes place by way of lymphatics connecting the penis directly with the deep pelvic nodes through the epigastric channels by-passing the inguinal and femoral lymphatics.

It is now general knowledge that carcinoma of the penis occurs rarely in the circumcised, the neoplasm being almost unknown in the races and religious sects practicing ritual circumcision of the infant male. It has been postulated that smegma may be the carcinogenic agent. Recent reports in the literature have cited the comparative rarity of cancer of the cervix uteri in Jewish women, and have raised the possibility

Figure 2. Photograph of surgical specimen showing fungating cauliflower-type lesion of penis and replacement of inguinal lymph nodes by metastatic carcinoma.

that smegma may be the carcinogenic agent in cervical cancer as well. Plaut and his associates[4] have induced with smegma changes resembling cancer in skin tunnels in mice. Dr. H. R. Pratt-Thomas of the Department of Pathology of the Medical College of South Carolina and his associates are investigating whether cancer of the cervix can be induced by human smegma in the laboratory animal.

DIAGNOSIS

All suspicious lesions of the glans penis should be considered malignant until proved otherwise. Differential diagnosis includes carcinoma of the urethra, chancre, chancroid, lymphopathia venereum, granuloma inguinale, pyogenic balanitis, balanitis xerotica obliterans, and erythroplasia of Querat. All too often, patients are given long courses of penicillin and referred to the urologist or the Cancer Clinic only after erosion of the penile shaft is present, at which time metastasis may already have occurred. Reliance in "faith healers" has resulted in some cases being seen in the Cancer Clinic after the neoplasm has eroded and involved the symphysis pubis, at which point the tumor is inoperable.

Conclusive diagnosis is achieved only by biopsy and microscopic examination of tissue sections. If the biopsy material shows carcinoma, the patient should be admitted for the appropriate surgery without delay. We are in agreement with Hudson, Cason and Scott[5] that biopsy of enlarged inguinal lymph nodes is inconclusive and often misleading. A "negative" biopsy in such cases means nothing, as the surgeon may have selected the only node not involved by the neoplasm. On the other hand, enlarged inguinal nodes do not necessarily mean that metastasis has taken place. The primary tumor invariably becomes secondarily infected in the course of time and often causes a regional hyperplastic lymphadenitis.

SELECTION OF OPERATION

We do not dispute the opinion of some urologists[6] that simple amputation of the glans with a cuff of grossly uninvolved penile shaft is an adequate and curative procedure in early cancer of the penis. We still prefer, however, to remove the superficial regional lymphatics so that a conclusive prognosis can be obtained.

We consider inoperable those cases in which (1) the symphysis pubis has been involved by direct extension of the neoplasm, (2) the regional lymphatic metastases have ulcerated through the skin and infiltrated the underlying fascia and muscle, (3) the excretion urogram shows lateral displacement of the ureters by enlarged periaortic lymph nodes, or (4) the chest x-ray film shows pulmonary metastases or widening of the mediastinum by enlarged lymph nodes. Simple amputation of the penis with its primary lesion may sometimes be useful for palliative purposes in cases having distant metastases but no gross ulceration of the groins. Roentgen ray therapy is of little benefit in penile cancer.

The majority of cases of penile cancer seen in the private practice of the author and in the Cancer Clinic of the Medical College of South Carolina do not represent early lesions, but at the same time they do not present distant metastasis or technically inoperable local extension. In most cases, therefore, the operative procedure mentioned in the introduction of this paper and described below is considered at the time this paper is written to be the operation of choice.

TECHNIQUE OF OPERATION

1. *AMPUTATION OF PENIS.* If the tumor is confined to the glans penis and its immediately adjacent tissues, a mid-shaft amputation of the penis is performed, leaving an appendage which is functional for direction of the urinary stream and for coitus. If the shaft proper has been invaded by the neoplasm, total amputation of the penis is performed and the stump of the urethra brought out through a stab-wound in the perineum midway between the anus and the junction of the scrotum with the perineum. These patients are able to urinate satisfactorily in the sitting position. In our experience, the use of a tourniquet about the base of the penis is not necessary. Clamps are placed across the corpora cavernosa at the desired level and mattress suture ligatures of chromic catgut are placed and tied before the clamps are removed. It is mandatory that the skin be divided at a sufficient distance distal to the amputation of the corpora cavernosa to allow coverage of the stump without tension. Whether a shaft amputation or total amputation is performed, an adequate length of corpus spongeosum with urethra should be preserved to allow at least two centimeters to protrude beyond the skin edges. The urethral stump may be incised in "fish-mouth" fashion and sutured to the skin or it may be allowed to protrude and slough off. Either method will result in a satisfactory urinary meatus.

We formerly proceeded with the regional lymphatic

Figure 3. Photograph of patient 12 days after second-stage operation showing bilateral longitudinal parallel groin incisions. The penis has been amputated and a perineal urethrostomy performed.

dissection immediately following the penile amputation. We now feel that the presence of infection locally and in the regional lymphatics makes primary healing of the inguinal wounds less likely and we prefer to perform the groin dissections at a second sitting approximately a week later, during which period the patient is administered antibiotics.

II. *GROIN DISSECTION.* Hudson, Cason and Scott[5] found that 33 of 70 cases of penile cancer, or 47.1 per cent, had metastases to the regional lymphatics at the time of operation. For this reason, we feel that en bloc dissection of the inguinal and femoral lymphatics should be routinely performed. Suspicious lymph nodes should be selected from the surgical specimen for immediate frozen section and microscopic examination. If metastatic carcinoma is demonstrated in these nodes, dissection of the deep iliac lymphatics should be proceeded with.

As mentioned in the introduction, we have abandoned the classic lower abdominal crescentic incision as used by Young because of the almost inevitable break-down of the wound due to devitalization of the undermined skin flaps. We now employ bilateral parallel longitudinal incisions directly over the inguinal and femoral lymphatics which require little undermining of the skin flaps. As a result, primary healing is obtained in most cases. In closing the wounds, it is important to suture the skin edges to the muscle fascia in order to obliterate the dead space and prevent pooling of serum. Leaving a rubber drain at the dependent end of the wound and the application of pressure dressings seem to hasten the healing process. Figure 3 shows one of our patients 12 days following the second stage of the operation with firm primary healing. Total amputation of the penis and perineal urethrostomy were necessary in this patient at the first stage operation. Figure 4 shows the blocks of tissue removed from the groins in this patient.

RESULTS

Operative mortality. Five cases from the Cancer Clinic and two cases of the writer have been subjected to the above operation with no deaths. Hudson, Cason and Scott[5] reported a seven per cent mortality in 70 cases subjected to the Young operation over a period of 40 years. Although these authors do not analyze the deaths, we assume that they were probably due to sepsis in the days prior to chemotherapy and the antibiotics. Inasmuch as virtually all cases of cancer of the penis occur in comparatively young individuals, there should be a negligible mortality rate. There is minimal blood loss during both the penile amputation and the groin dissection. We have noticed no tendency to shock in our series of cases.

Survival. In the Johns Hopkins Hospital series cited previously,[5] 46 per cent survived operation five years

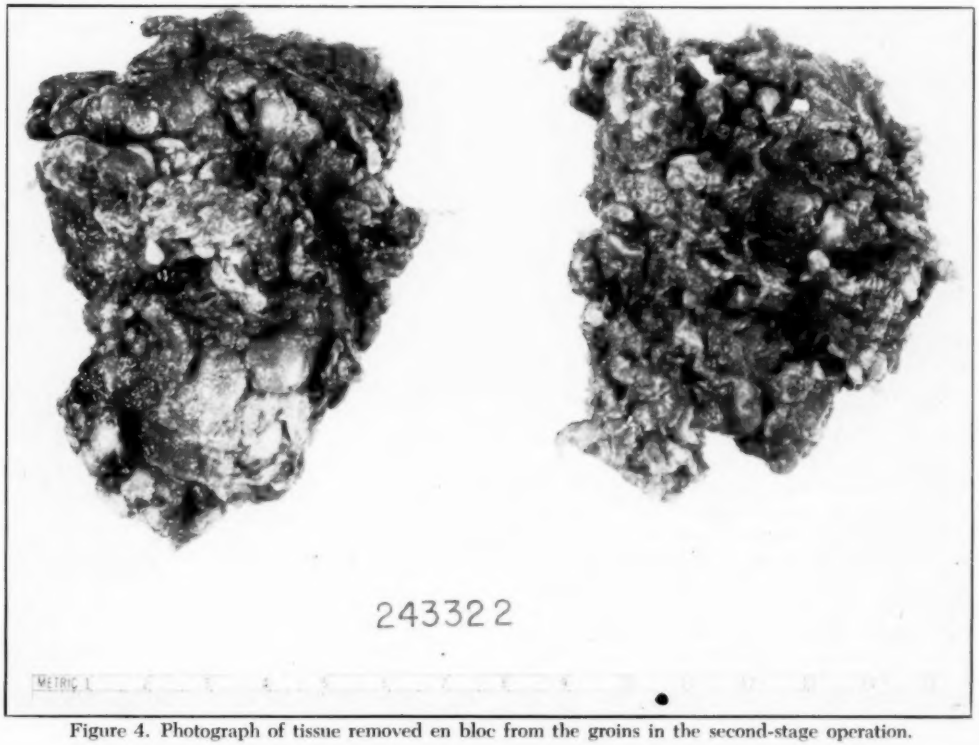

Figure 4. Photograph of tissue removed en bloc from the groins in the second-stage operation.

or longer. Of 19 patients having metastases at the time of operation, six lived five years or longer. Our own series is too young and too small to provide statistics on survival. It is our opinion, however, that more of the patients in the Johns Hopkins series would have survived five years had dissection of the deep pelvic lymphatics been carried out when metastasis was demonstrated in the superficial regional lymphatics.

Healing. In our series, utilizing the bilateral groin incisions, primary healing with short hospitalization has been achieved in two-thirds of the cases. We have had wound slough and healing by second intention in only one patient subjected to the two-stage procedure.

SUMMARY

All suspicious lesions of the glans penis should be considered cancer until proved otherwise. The physician should not exclude malignancy from his differential diagnosis because the patient is in his twenties or thirties; most of our cases have occurred in this age group.

It is now established that cancer of the penis rarely, if ever, occurs in the circumcised. For this reason, it is strongly suggested that all males be circumcised in infancy.

We believe that all operable cases of penile cancer should have superficial regional lymphatic dissections. If metastasis is demonstrated in the superficial lymph nodes on frozen section, the deep iliac lymphatics should be removed.

The two-stage operation and bilateral longitudinal groin incisions are recommended as time-saving in hospitalization because of the greater incidence of primary healing than with the Young classic crescentic abdominal incision. The operative mortality is negligible.

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SULFA AND THE ANTIBIOTICS

With the coming of winter and the greatly increased incidence of respiratory infections, doctors will be confronted anew with the necessity for giving antibiotics and the sulfonamides. More and more the public is beginning to expect, yea, even to demand, that one of these drugs be used when treating any infection—be it just the common cold—and the conscientious doctor finds it hard to maintain a scientific balance in his use of these potent weapons.

No hard and fast rules can be laid down for doctors as they contemplate the use of these "wonder drugs," and yet certain simple principles might be employed which would prevent trouble:

Consider each case on its own merits and do not adopt any set routine for the treatment of different infections.

Make a definite diagnosis—if it is possible—before instituting treatment.

Do not use an antibiotic or one of the sulfonamides unless there is a clear indication for so doing—an indication which would stand up before a consulting physician.

Watch carefully for side reactions, and always inquire as to whether a patient has had the drug on a previous occasion before prescribing it.

When using chloromycetin, have a hemoglobin and leucocyte study made twice a week.

When using the sulfonamides for any length of time, make repeated studies of the blood and urine.

When using the drugs in children, adapt the dose to the weight of the child, not to the age.

Discontinue the drug as soon as possible, except in those rare cases where it must be continued for a length of time. (Failure to stop the giving of these drugs in hospital patients has caused great waste and has increased the most of hospitalization immeasureably).

Be a doctor of medicine and prescribe for your patients yourself—don't let them tell you what to give.

ARMY MEDICAL EXAMINATION

It was our duty and privilege recently—being just two weeks short of the age limit—to join some two hundred other physicians in the state in a medical examination at Fort Jackson to determine our fitness for military service. It proved to be an interesting experience and at the same time brought back memories of a decade ago.

The examination itself was in marked contrast to that experienced by many of us during 1941 and 1942 when we volunteered for service, only to be turned down for physical disabilities or else to be declared "essential" by Procurement and Assignment and told to stay at home. Instead of walking around in the covering in which we had come into the world we were afforded bathrobes and slippers. The medical officers were courteous and we were treated as colleagues. Every effort was made to speed up the work and such delay as prevailed was understandable. For all of this, we are duly grateful to Col. Gates, Chief Medical Officer at Fort Jackson.

Most of the men we saw who went up for the examination were over forty and many were pushing fifty. Many of them had been turned down for physical ailments ten years ago and they presented a picture of physical fitness which is hardly conducive to becoming a part of the U. S. Army today. But the spirit of the men was excellent. Most of them realized full well that this entire procedure was but a nation-wide inventory of the man power available among the doctors who were not yet fifty one and who had not served in World War II, and that the chances for those over forty years of age being called up for actual service was minimal. But we heard no complaining and a spirit of joshing and kidding prevailed. There were a few who had completed their medical education since 1946 and for these men it was serious business—and yet they knew that military service lay ahead and they accepted the fact with no complaint.

As we went down the line we could not but think of the difficult times which had faced us in 1942,

Physicians in South Carolina were patriotic. Before and after Pearl Harbor, doctors were volunteering in every county. When a quota for each state was finally established in October of 1942, South Carolina already stood at 174% (which is to say, South Carolina had given to the armed services 74% more doctors than the armed forces expected her to give). We were second only to Alabama in the entire nation. It was during this time that the Chairman of Procurement and Assignment for South Carolina, Dr. "Buck" Pressly, had so many difficult decisions to make. Uncle Sam was calling for doctors, but so were the people of South Carolina—and it was no easy task to say which doctors were "available for service," and which were "essential." Let it be said to the credit of the doctors of South Carolina that there were only four men who were declared "available for military service" who did not eventually wear a uniform. And there were dozens of others who were anxious to go who were denied the privilege by Procurement and Assignment and were told to stay on the home front.

The situation on the home front in South Carolina was critical during the early years of the war so far as medical care was concerned. A study was made by Mr. Marshall Pickens of the Duke Endowment in 1942 on "The effects of the war on the medical service in 12 South Carolina counties with limited medical personnel," and appeared in the September issue of this Journal in that year. The counties which he studied were Abbeville, Allendale, Bamberg, Barnwell, Berkley, Calhoun, Edgefield, Fairfield, Hampton, Jasper, McCormick, and Saluda. In 1940 the ratio of physicians to population in these counties was 1:2,485. By 1942 it had risen to 1:3,326, (the lowest was 1:2,495 in Hampton and the highest was 1:5,703 in Saluda). In a later study made by this Journal and published in January of 1943, the ratio of active physicians to population for the entire state (this did not include public health physicians or those men who were devoting their full time to institutions) was 1:2,264. It was indeed providential that no severe epidemic of influenza occured in South Carolina during that period.

What the future holds no one can fortell. It is our sincere hope, however, that should another world war come provision will be made for the registration of every physician, making him subject to call, and that a plan similar to Procurement and Assignment of World War II will be established—but established immediately and not many months after the war has started, as was the case in World War II. Only in this way can a fair and just use be made of the doctor-power which is available throughout the country.

DEATHS

ARTHUR LLOYD BLACK

Dr. Arthur Lloyd Black, 67, Bowman physician, died on October 19, in a hospital in Birmingham, Alabama. He had been visiting his son, Dr. Arthur Black, Jr., in Birmingham.

A native of Saluda County, Dr. Black attended Newberry College and was graduated from the Medical College of South Carolina in 1912. Soon after his graduation he began practicing in Bowman where he practiced for more than forty years. He was a former mayor of Bowman and was active in religious and civic work of the town.

Surviving Dr. Black are his widow, two daughters and two sons.

NEWS ITEMS

Dr. John M. Preston of Columbia has been elected President of the South Carolina Public Health Association.

Dr. William Smith of Great Falls has opened an office at Fort Lawn and plans to be there each Tuesday and Saturday afternoon.

The South Carolina Heart Association will hold its annual meeting in Greenville in February.

Dr. G. P. Joseph of Myrtle Beach attended the Sixth Annual Assembly of the World Medical Association held in Athens, Greece, during October.

Dr. J. A. Tobin and his wife, Dr. Mary T. Tobin, have opened their offices in Denmark for the practice of general medicine.

Dr. Fred H. Fellers and Dr. John E. Holler of Columbia, have been named Fellows of the American College of Surgeons.

Dr. A. Richard Johnston of St. George, was elected president of the Coastal Medical Society, at a recent meeting in Walterboro. Other officers are Dr. C. B. Woods of Walterboro, Vice President, and Dr. Holland Carter of Smoaks, secretary-treasurer. Guest speakers at the meeting were Dr. M. W. Beach of Charleston and Drs. Frank Owens and Charlie Mitchell of Columbia.

Dr. John Homer Mathias, Jr. has opened offices in West Columbia for the practice of general medicine.

The Nineteenth Annual Meeting of the American College of Chest Physicians will be held at the Hotel New Yorker, New York City, May 28-31, 1953.

Physicians who wish to present papers at the meeting should submit titles and abstracts to Dr. Arthur M. Olsen, Chairman, Committee on Scientific Program, American College of Chest Physicians, Mayo Clinic, Rochester, Minnesota.

TENTATIVE PROGRAM

Fifteenth Annual Symposium
Duke University School of Medicine
Durham, North Carolina
December 9 - 10, 1952

ADVANCES IN THERAPY

Tuesday, December 9, 1952

2:00 - 3:30 P. M.—Dr. L. J. Meduna, Professor of Psychiatry, University of Illinois, Chicago, Illinois. "CO-2 treatment of psychosomatic disorders."

3:30 - 4:30 P. M.—Dr. James Toman, Division of Neurophysiological Research, Psychosomatic and Psychiatric Institute, Michael Reese Hospital, Chicago, Ill. "Mechanism of Action in Relation to Clinical Effectiveness of Anti-convulsant Drugs."

4:30 - 5:30 P. M.—Dr. C. P. Rhoads, Director, Memorial Center for Cancer and Allied Diseases; Professor of Pathology, Sloan-Kettering Division, Cornell University Medical College. "Trends in the Management of Neoplastic Disease."

INTERMISSION

8:00 - 9:00 P. M.—Dr. Harry Eagle, Chief, Experimental Therapeutics, National Microbiological Institute, National Institutes of Health, Bethesda 14, Maryland. "Antibiotic Therapy."

9:00 - 10:00 P. M.—Dr. J. Maxwell Chamberlain, Associate Surgeon, Columbia University College of Surgeons; Associate, Visiting Chest Surgeon Bellevue Hospital, New York, N. Y.; Attending Thoracic Surgeon, Roosevelt Hospital, New York, N. Y. "Segmental Resection in the Surgical Treatment of Pulmonary Tuberculosis (400 cases)."

Wednesday, December 10, 1952

9:00 - 10:00 A. M.—Dr. Charles P. Bailey, Professor and Head, Department of Thoracic Surgery, Hahnemann Medical College and Hospital, Philadelphia, Pa. "Intracardiac Surgery."

10:00 - 11:00 A. M.—Dr. Lewis Dexter, Physician, Peter Bent Brigham Hospital; Assistant Professor of Medicine and Tutor in Medicine, Harvard Medical School. "Pathological Physiology of Mitral Stenosis and its Surgical Implications."

11:00 - 12:00 P. M.—Dr. Samuel A. Levine, Physician, Peter Bent Brigham Hospital, and Clinical Professor of Medicine, Harvard Medical School. "A Cardiologist's View of Mitral Valvuloplasty."

2:00 - 3:00 P. M.—Dr. Irving S. Wright, Professor of Clinical Medicine, Cornell University Medical College; President, American Heart Assoc. "Modern Treatment of Myocardial Infarction."

3:00 - 4:00 P. M.—Dr. Joseph J. Bunim, Chief, Arthritis & Rheumatism Branch, National Institute of Arthritis and Metabolic Diseases. "Recent Observations on Prevention and Treatment of Rheumatic Fever."

BOOK REVIEWS

For Boys Only, By Frank Howard Richardson, M. D. Cloth. $2.75. Pp. 91. Tupper & Love, Inc., 1090 Capitol Avenue, S. E. Atlanta, Georgia. October 1952.

For Boys Only is refreshingly new in its approach and style. It is most interesting and is written in a modern breezy way. Yet there is no sacrifice of clear, concise English which is easily understood. While the book is intended for boys between the ages of about 10 to 16 years, singly or in groups, it never talks down to them, never evades an issue and does not compromise. It is by no means just a sex manual or another text book.

The author, a well know doctor and lecturer, has already done much for children, and does not believe that pediatrics should deal with diseases only. In this volume one will find subjects discussed frankly, but without eroticism. There is nothing said that could unwisely stimulate a youth's curiosity in matters of sex, but there is constantly an attempt to answer questions that naturally occur to a young boy. Doctor Richardson does not preach at his boys, neither does he look for perfection. In answering questions supposed to have been put to him; and in giving the essentials of anatomy and physiology of the generative tract he does not become pedagogic, nor does he use words that are too technical. He meets his boys on their own level, without sanctimony or mystery. The author constantly tries to have each boy learn the truth about himself. Then if he elects to keep control of his desires and passions at all times he will later on be glad that he did what was best for him, his male and female companions and society.

Doctor Frank H. Richardson might have entitled this little volume: Common Sense about Sex or The Truth Shall Set you Free, but his wording is more consistent with the text. Since this book is made up of chapters, each being on a separate subject, and as all his statements are replies to questions, the reader does not tire and is stimulated to read on so as to see what comes next.

This unusual and attractive addition to pediatric literature should be well received by doctors, parents and those interested in the welfare of children.
R. M. Pollitzer, M. D.

CORRESPONDENCE

October 11, 1952

Journal of the South Carolina Medical Association
Letter to the Editor

Recently there have been news items in many papers in the state calling attention to the fact that doctors in Priority III are being called up for pre-induction physical examinations. This has brought forth a storm of discussion among us, probably unequaled since the present amendment to the Selective Service Act was adopted. Why all the discussion? No one seriously objected when Priority I men were called; likewise, the call of Priority II men brought forth little comment or objections. Why the present storm? The answer is this: All Priority I men have not been called.

Why? Will they be called or have they been deferred indefinitely? Many Priority II men have not been called. Why? Will they be called, or will they be deferred indefinitely?

I believe that every doctor in South Carolina is entitled to the following information at the earliest possible moment, either through the medium of the Journal or through letters to each county medical society. Every doctor has the right to know and should know:

1. The names of all men in Priority I who have not been called for service and the reasons why.
2. Names of all Priority II men who have not been called for service and the reasons why.
3. Names of all Priority III men and the order in which eventually they are to be called according to law.

I do not mean to infer that the Medical Advisory Committee has not and is not doing a good job. However, I believe every physician in South Carolina should have, and would like to have, full information as to where he stands and where other members stand on the matter of military service to his country.

I myself am in Priority IV.

Harry C. Tiller
Georgetown, S. C.

cc: Dr. Frank C. Owens
1319 Laurel St., Columbia, S. C.
Dr. Ton Weston
Wine St., Mullins, S. C.

October 15, 1952

Dr. Julian P. Price

117 W. Cheves Street

Florence, South Carolina

Dear Dr. Price:

The South Carolina Heart Association will have their annual meeting in Greenville, South Carolina, on Tuesday February 3rd. Dr. Schulze is the Program Chairman.

I understand that we are to have some outstanding speakers on the program as well as a report from Dr. John A. Boone on activities on research on heart disease of the Medical College in Charleston, and I am just wondering if it wouldn't be a good idea to put a notice in the South Carolina Medical Journal. We will, however, send invitations to all of the doctors of the South Carolina Medical Association and a program.

With kindest personal regards, I am

Very sincerely yours,

H. M. McElveen

Executive Secretary

WOMAN'S AUXILIARY
SOUTH CAROLINA MEDICAL ASSOCIATION

President: Mrs. W. O. Whetsell, Orangeburg, S. C. **Publicity Secretary: Mrs. N. D. Ellis, Florence, S. C.**

MRS. W. O. WHETSELL, MEDICAL AUXILIARY HEAD, PRESIDES AT STATE EXECUTIVE MEETING

The executive board of the Woman's Auxiliary to the South Carolina Medical Association convened at the home of the president, Mrs. W. O. Whetsell, in Orangeburg on October 2. Present for the meeting were state officers, county presidents, committee chairmen, members of the advisory council and other distinguished guests. State officers attending the meeting were Mrs. David A. Wilson of Greenville, president-elect; Mrs. A. T. Moore of Columbia, first vice-president; Mrs. W. P. Turner, Jr. of Greenwood, third vice-president; Mrs. C. R. May, Jr., fourth vice-president; Mrs. B. J. Workman of Woodruff, treasurer; Mrs. V. Wells Brabham, Jr. of Orangeburg, corresponding secretary; Mrs. M. J. Boggs, recording secretary; Mrs. John A. Seigling of Charleston, historian; and Mrs. T. A. Pitts of Columbia, parliamentarian.

County presidents representing their local auxiliaries were Mrs. W. H. Spiegsegger of Charleston; Mrs. Hyman Marcus of Orangeburg; Mrs. W. W. Goodlett of Greenville; Mrs. Kemper Lake of Newberry; Mrs. J. O. Fulenwider, Jr., of Pageland, Mrs. T. P. Valley of Pickens; Mrs. Weston Cooke of Columbia; Mrs. Ragsdale Hewitt of Sumter; Mrs. Jack Bell of Greenwood; and Mrs. W. W. Fennell, Jr., of Rock Hill.

State committee chairmen came from various sections of the state and included Mrs. J. W. Kitchen of Liberty, National Bulletin chairman; Mrs. Neil C. Price, convention; Mrs. C. P. Corn of Greenville, Doctors; Mrs. J. L. Sanders of Greenville, Finance; Mrs. Alton Brown of Rock Hill, Memorial Fund for Student Nurses; Mrs. Kilgo Webb of Greenville, Legislation; Mrs. James H. Gressette, publicity and press; Mrs. A. W. Welling of Newberry Public Relations; Mrs. P. J. Boatwright of Orangeburg, Printing; Mrs. Newton C. Brackett, of Pickens, Research and Romance of Medicine; Mrs. W. H. Folk of Spartanburg, Revision; and Mrs. John Cuttino of Charleston, Today's Health.

The meeting was called to order by the presiding officer and the president-elect, Mrs. David A. Wilson led the members in the Auxiliary pledge. Routine business included the reading of the minutes, the roll call and reports of officers and county officers. After that Mrs. Whetsell called for nominations for the members of the nominating committee and the following were elected to serve: Mrs. Kirby D. Shealy, Mrs. J. A. Seigling, and Mrs. R. M. Pollitzer. After old and new business were taken under consideration the meeting adjourned to the Eutaw Hotel for lunch. A telephone pad and pencil set was the favor at each place and place cards were decorated with one-winged coduceus, the emblem of the auxiliary, and an amusing verse.

The invocation was given by Mrs. C. P. Corn and following the lunch, Mrs. Whetsell introduced the visitors at the speakers' table and the guest speaker for the luncheon, Dr. L. P. Thackston, president of the S. C. Medical Association. Dr. Thackston spoke in a very interesting manner of the Auxiliary's place beside the Medical Association. He expressed the doctors' appreciation of their services in the past and asked for their continued support in the future.

Other members of the Advisory Council present were Dr. A. B. Preacher of Allendale and Mr. M. L. Meadors of Florence.

SOUTH CAROLINA WOMEN MEMBERS OF EXECUTIVE BOARD OF AUXILIARY TO SOUTHERN MEDICAL ASSOCIATION

Mrs. J. L. Sanders of Greenville is Councilor from South Carolina and Mrs. M. J. Boggs of Abbeville is Vice-Councilor.

Mrs. C. P. Corn of Greenville is Chairman of Research and Romance of Medicine.

COLUMBIA ENJOYS SOCIAL MEETING

The Columbia Medical Society, assisted by the Woman's Auxiliary to the Columbia Medical Society, entertained with a barbecue in honor of the Medical Society president, Dr. W. P. Beckman, at Heisie's Pond on October 30. Dr. Tucker Weston and Mrs. Izard Josey served as co-chairmen.

SELF MEMORIAL HOSPITAL SCIENTIFIC SESSION INCLUDES PLANS FOR VISITING WIVES

The wives of the staff of the Self Memorial Hospital are assisting with the plans for the Scientific Session to be held on November 12. Mrs. Jack Bell, president of the Third District, has appointed a committee to take care of the arrangements for the day. Doctors from the state are invited to come and bring their wives.

THE TEN POINT PROGRAM

M. L. MEADORS, DIRECTOR OF PUBLIC RELATIONS AND COUNSEL

OUR BLUE SHIELD FEE SCHEDULE

This is the first of a series of short articles dealing with the South Carolina Medical Care Plan. This will deal with the new fee schedule which became effective on August 1. This new schedule of fees is more explicit and detailed than the old schedule. Most operative procedures are listed and a specific fee set. If an injury or operation is not listed, usually a comparable one is listed. There are much fewer I. C. (individual consideration) cases.

Although the schedule was prepared with great care and was carefully proofread, some errors crept in. Several of these will be mentioned so that changes may be noted in your copy of the schedule.

Add the following:

0007—Crucial incisions for snake bite, $20.00.

0043—Removal of foreign body (splinter, needle, etc.) from subcutaneous tissue, $5-20.00.

0654—Neck traction by halter, $10.00.

1396—Transurethral fulguration of cysts of vesicle neck or excessive granulation tissue in posterior urethra, $25.00.

2202—Add the word "unilateral."

2203—Bilateral, $150.00.

6050—Surgical first aid, prior to referral to specialist for definitive treatment, $5.00.

6051—Consultation when indicated and not otherwise provided for, $10.00.

After 0055—Biopsy of breast, add "(by aspiration, $5.00) independent procedure, $25.00."

After 0914—add the words, "independent procedure."

Change the fees listed as follows:

1520 to $50.00.

1546 to $125.00 (also strike out the words in the second line.)

1585 to $85.00.

1587 to $85.00.

2291 to $15.00.

2292 to $10.00.

A comparison of the new schedule with the old will reveal that there has been a considerable increase in the fee allowed for many operations. This reflects a successful operation, actuarially. There have also been increased benefits to the subscriber. These changes will necessarily be reflected in lessened additions to our reserves, percentage-wise. However, our constantly increasing enrollment should take care of that safely. At some future date, it is hoped that the maximum fee allowed, which is now $150.00, may be increased somewhat and that fees which are now substandard may be raised. However, we must feel our way in these matters, and act in accordance with our actuarial experience.

Some of our participating physicians do not seem to understand that only one fee is allowed for multiple but related surgical operations and yet this is clearly stated on page one of the Fee Schedule and is in line with usual operative charges. Probably no surgeon charges an extra fee for routine appendectomy, or for oophorectomy or for puncturing ovarian cysts, when done coincidental with hysterectomy. Nor does he charge an additional fee for breaking up adhesions in the course of a cholecystectomy or gastrectomy. The same is true of repairing a rent in the intestine accidentally made by him. There is no need of stating the lesser and related and coincidental procedures in reporting the chief operation performed. With regard to multiple unrelated surgical operations done by a single surgeon, the general principle is to allow the fee for the major procedure and one-half of the fee for the others. If opinion should differ as to what operations are related and what are not, the decision of the Plan will have to prevail. Some indication of the Plan's attitude is given in the fee schedule by the words "independent procedure" which follow the names of many operations which are done frequently routinely in connection with major operations.

Participating physicians are not only at liberty but are urged to write in complaints, questions, and sug-

gestions. Such will be received kindly and will be replied to as promptly as practical. Mistakes are made in our office and by all of us, although great effort is made to avoid them. At times, delay in settling claims arises because of some unusual feature of the case.

Fees allowed under the new medical and surgical contract for anesthesia can be paid only to participating physicians. However, since in at least one community, nurse anesthetists give anesthetics on a fee for service basis, the Board at its last meeting ruled that the allowed fee in such cases would be paid to the subscriber. This is possible since payment for anesthesia is on a cash indemnity basis rather than on a service basis.

The subject for next month's discussion will deal with the new Physician's Report Blanks.

J. Decherd Guess, M. D.
Medical Director

LEGISLATIVE CONFERENCE FOR CAROLINAS

A Conference on Medical Legislation, for physicians in the two Carolinas, was held in Charlotte on Friday, October 17. The meeting was attended by approximately fifty key physicians from the two states, of which about fifteen were from South Carolina.

This was one of a series of meetings being held in the Southeastern area under the direction of the Legislative Committee of the A.M.A. and the A.M.A.'s Washington Office. Dr. Frank E. Wilson, Director of the Washington Office, and Mr. Jim Forrestal, its legal advisor, were present and discussed matters of interest. Dr. Julian Price of Florence, member of the 9-man A.M.A. Committee for the Southeastern section of the United States, presided.

Needless to say, the meeting was strictly non-political. It was devoted solely to a discussion of the reason for establishment, purpose and activities of the Washington Office; and of proposed legislation affecting the medical profession, directly or indirectly, which was pending at the adjournment of the last Congress, and expected to be reintroduced when the new Congress convenes in January. Similar conferences were held on preceding days in Jacksonville for Georgia and Florida, and in Birmingham for Alabama and Mississippi. The discussion was both informative and interesting. The tone was definitely informal and those attending were invited and urged by the speakers and the presiding officer to ask qustions and, generally, to participate in the discussion. This they did.

Included among those attending from South Carolina were three officials of the Woman's Auxiliary to the State Medical Association: Mrs. Alton G. Brown, Mrs. Roderick Macdonald, and Mrs. W. W. Fennell, all of Rock Hill.

Members of the Association present included: Dr. Lawrence Thackston, its president; Dr. O. B. Mayer, Chairman of the Council; Dr. R. L. Crawford, member of Council; and Drs. A. W. Browning, W. L. Pressly, J. O. Warren, Norman Eaddy, W. T. Barron, and W. L. Perry.

All of those attending were the guests of the A.M.A. at luncheon served immediately preceding the business session.

ARE GRIEVANCE COMMITTEES SERVING THEIR PURPOSE?*

Robert E. Fitzgerald, M.D.

It seems to me that the reasons for establishing and maintaining a grievance committee are three in number. First, in compliance with our Hippocratic oath and with our code of ethics as expressed by the American Medical Association, we are bound to make every effort to keep the practice of medicine on the highest possible level. Second, anything we may do in the way of policing our own organization will combat the adverse criticism that has flourished under the New Deal and the proposed Welfare State. Third, a concerted effort to mediate with the public, whenever real or alleged grievances are brought to our attention, constitutes the best type of public relations. It was recommended by the House of Delegates, in December of 1949, that committees be set up to hear, consider, and mediate genuine or fancied grievances, and thirty-four state Medical organizations had set up such committees by September, 1950. These state committees may vary in the number of members, in the tenure of office, in the method of selection of members of the committee, but basically they are all striving for the same goal, namely to demonstrate to the public that, despite adverse publicity disseminated by the proponents of socialized medicine, the medical profession itself has a sincere desire to bring the best service to the greatest numbr of people. Since in many states the committees are young, they are sailing uncharted seas and each state must deal in its own way with any problems which are peculiarly its own; but all the committees are trying to demonstrate the awareness of the physician to his responsibility to his patient.

A Committee on Grievances, such as we have in Wisconsin, has, in my opinion, certain very definite responsibilities first of which is the responsibility to the public to supply it with the best possible medical care. This responsibility can be fulfilled by seeing to it that the ideals of the profession are upheld completely in the case of everyone practicing medicine: A huge task, no doubt, and one almost impossible to fulfill, but it is worth striving for. Secondly, there is the responsibility to the members of the medical profession itself. This committee examines complaints against the individual physician and, through the

*Reprinted from Minnesota Medicine, April, 1952.

staff at the State Society's office, makes a thorough investigation as to the validity of these claims. When they are apparently valid, the complainant and the physician are given an opportunity to appear before the committee or to communicate with the committee and present their respective sides of the question. These are given deep consideration and, upon reaching a decision, the committee makes its recommendation to the Council of the State Medical Society of Wisconsin which body may recommend to the Board of Medical Examiners that the license of the offending physician be suspended or revoked; or, if in the opinion of the committee, the complaint is not valid or does not hold up under evidence produced by the complainant, the case is dropped and no action is taken by the Council. The Committee on Grievances in Wisconsin has no punitive power, but functions through the Council of the State Society. Another phase of the responsibility of the Committee on Grievances to the medical profession might well be considered educational, since it strives to make all members of the medical profession aware of their own responsibility to the public by observing to the letter and in the spirit all drug laws, by co-operating with the Pharmaceutical association, by working with the Bar Association on the matter of expert testimony in court, and by assisting existing government health agencies.

In discussing the functions of a grievance committee, the question of publicity arises. How much publicity should there be? In Wisconsin, the committee sent letters to judges, to health agencies, and to other organizations interested. In this last category, the Bar Association, which had made some queries concerning expert medical testimony, was especially advised of the formation of the committee and all were acquainted with its aims. To date, no complaints have been received from these groups, but the committee feels that this publicity was beneficial, since it made large groups aware of the existence of the Committee on Grievances and its willingness to work for the public good. In addition, there have been press releases announcing the formation of the committee and its objectives, so that the general public might be informed. The Committee on Grievances in Wisconsin is fully aware of the importance of absolute discretion on the part of its members so that unfavorable, or "gossip" type, publicity can be avoided. Every effort is made to keep all matters confidential, all cases are coded, and correspondence, except with the physician and complainant, is identified by code. It is essential that the existence and objectives of the committee be publicized 100 per cent among the members of the medical profession.

It has been asked, "What is the responsibility of the medical society to the physician who persists in a course of misconduct?" Our committee warns the physician that his case is being reported to the Council and that the Council will recommend a course of action to the Board of Medical Examiners. Punitive power rests with that Board and the committee can do no more than recommend through the Council. In short, the responsibility to the physician who persists in misconduct merges into the responsibility of the committee to the public.

The Committee on Grievances in Wisconsin does not function as a bill collecting agency. In my opinion, activity of that type would defeat the purposes of the Committee by giving the public the wrong impression of its aims. The only economic phase with which our committee is concerned is that of the fairness of the charges made by the physician, and then only when it is drawn to our attention by a complaint, since we assume that in this day and age any right minded physician realizes the importance of fairness in the matter of bills.

I have selected three typical cases which have come before our committee, in order to give a clearer idea of the Committee on Grievances in action.

Case 1.—A child with a lacerated forehead was taken to a pediatrician during the absence of the family doctor. The pediatrician told the parents that he did not take care of this type of case and referred them to a plastic surgeon. The patient was hospitalized and three pieces of adhesive were used to bring the edges of the wound together. The pediatrician charged $15 for his advice, the plastic surgeon $50 for his call and $5 for each successive treatment. It was decided, after thorough investigation of the case, that treatment by the family physician would not have exceeded $10. This case is still pending. It is, however, typical of the overcharge claim that is made, although there are many times when a physician is accused by a patient of overcharging when the charge is just and the complaint arises from the patient's lack of knowledge of what the treatment entailed. Physicians have been urged many times to discuss possible charges with their patients before treatment so that there be no misunderstanding.

Right here it might be well to delve a little deeper into the whole question of fees and the necessity of frank discussion of the nature of his condition with the patient. Too often we hear that the doctor gives his patient too little information about the nature of his illness or, if he does make any attempt at explanation, couches this in scientific terms which leave the patient not only in the dark but with a feeling of frustration. It is highly important that the physician take the time to explain as simply as possible what the situation is. He should also point out the cost of treatment and plan with the patient how he may finance his, if it appears to be a burden. In discussion of this sort, frankness is essential. In the matter of fixing charges a doctor should consider several factors: the complexity of the job, the extent of the service

necessary, and the ability of the patient to pay. A certain flexibility in adjusting his fees is often necessary when the patient's financial status makes average charges a burden. When the family doctor feels the services of a specialist are indicated he should explain this to the patient and also give him some idea of the probable charges of the specialist. In this way, many misunderstandings can be avoided and the patient will have a kindlier feeling toward the physician he knows has his best interests at heart.

Case 2.—A physician was charged by a score of people of being intoxicated while attending patients. The doctor appeared before the committee and investigation disclosed that he was suffering from multiple sclerosis and there was no indication of alcoholism. He was advised to stop the practice of medicine for the good of all concerned.

Case 3.—A general practitioner was accused of practices contrary to medical ethics and against the public interest. After appearing befort the committee he was advised to consult a psychiatrist, who recommended that the physician enter an institution for treatment.

In addition, there are cases which are brought forward where there is evidence of promiscuous prescription of narcotics to addicts and others. This is often unintentional, but the committee stresses the importance of thorough investigation before prescribing narcotics and places the responsibility on the physician if this is not done.

Conclusion

In my opinion, the Committee on Grievances or the Grievance Committee, if you will, is the best instrument for implementing good public relations that organized medicine has at hand. It can do more for the physician than any other single committee within the Medical Society. Intelligent handling of medical-social and medical-economic affairs, accompanied by intelligent publicity, can do a very great deal to win and retain the confidence and esteem of the public. In its fair dealing, it bridges the gap formed by the natural reluctance of the patient to discuss his difficulties directly with his doctor and acts as a mediating board when differences arise. Members of the committee should be understanding, alert to the problems of the public and the physician, and they should be ever conscious of the paramount importance of discretion.

Since our committee has no punitive power, per se, it must rely upon the complete co-operation of every individual physician for its effectiveness. The fact that this committee, by its recommendations, may set in motion action which could result in suspension or revocation of a doctor's license, should act as a deterrent to that very small minority who might injure the reputation of the great numbers of conscientious members of the medical profession. In regard to the minority mentioned, we have in Wisconsin about 3,500 physicians, 3,000 of whom are in active practice. Each doctor sees at least one patient a day which would mean that at least 90,000 patients are treated in a month. The number of complaints which we have received is so small that the percentage of dissatisfied patients is infinitestmal, although it is conceded that that minute percentage can be very noisy on occasion, and, no matter sow small it may be, the publicity accruing to one instance of poor or unethical medical practice makes it imperative that any committee on grievances must exert every effort to solve any question that comes before it to the satisfaction of those concerned.

Grievance Committees that function ethically and effectively will be a great factor in avoiding the political control of medicine and, in addition, they can and do protect the economic and professional status and freedom of the physician, by acting at all times in the best interests of the public. Only by proving to the people at large that our Hippocratic Oath is a living thing to us and that the desire to serve mankind, which prompted us to make up the practice of medicine, still motivates our lives can we combat the criticism which has been hurled at organized, free medicine by advocates of the Welfare State.

MOUNTING COSTS OF MEDICAL EDUCATION

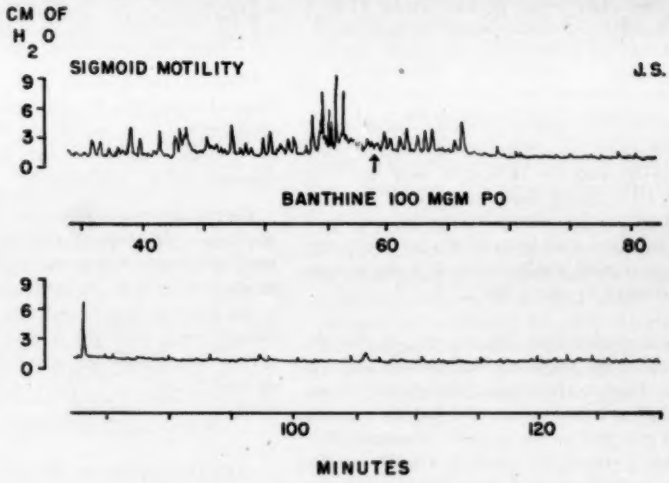
The continuing appeals of the American Medical Education Foundation to the medical profession to raise funds for the hard-pressed medical schools emphasize, to physicians at least, the mounting costs of medical education. There is real worry that education for the practice of medicine may become—as it was in the early years of this century—a "rich man's profession."

A bit of history may be helpful.

From 1900 to about 1914 medical education in the United States was sharply divided into two parts. There were a few good medical schools in the major universities that turned out graduates who very frequently went on for post-graduate training in the European universities. Vienna and Berlin were two outstanding Medical Meccas of the period. But all this took money and only the wealthier student could afford this extended foreign education.

There were also, in this same period, scores of substandard medical schools, some no better than diploma mills, where one could obtain a medical degree (for whatever it was worth) without the expense of the larger education with its overtones of PG training in Europe.

The diploma mills, and the poorly-trained men they created, were a menace to the health of the nation.



The effect of 100 mg. of Banthine on sigmoid motility. The contractions did not return during the experimental period.[1]

In Intestinal Hypermotility—Banthine®

"...has a prolonged inhibitory effect on human gastrointestinal motility....
The duration of its action is striking,...."[1]

It has also been observed that definite retardation in gastrointestinal transit time in individuals with hypermotility was attributable to the therapeutic effect of Banthine.[2]

BANTHINE® Bromide (brand of methantheline bromide)—a true anticholinergic—is available for oral and parenteral use.

1. Kern, F., Jr.; Almy, T. P., and Stolk, N. J.: Effects of Certain Antispasmodic Drugs on the Intact Human Colon, with Special Reference to Banthine (β-Diethylaminoethyl Xanthene-9-Carboxylate Methobromide), Am. J. Med. *11*:67 (July) 1951.

2. Lepore, M. J.; Golden, R., and Flood, C. A.: Oral Banthine, an Effective Depressor of Gastrointestinal Motility, Gastroenterology *17*:551 (April) 1951.

RESEARCH IN THE SERVICE OF MEDICINE **SEARLE**

Thus the American Medical Association led the drive to close down the sub-standard medical schools. Through A.M.A. pressure the Carnegie Foundation financed the exhaustive study of Dr. Simon Flexner which made notable recommendations on how medical schools should be staffed and the basic training they should provide.

At the same time the various Specialty Boards came into being (the Board of Opthalmology was the first in the year 1916) and the standards went up even higher. All in all a young man who wanted to enter medicine and go on for post-graduate training in a specialty had to have major financial resources to carry him over the years until, finally, he could enter private practice and attempt to earn a living.

Sizeable help in this financing came from the endowment funds of the major medical schools and the large voluntary teaching hospitals affiliated with them. The student paid a token tuition that did not pay for more than 25 per cent of his medical education. Endowment funds given to the medical schools as gifts from wealthy individuals and foundations paid the rest.

But rising costs and especially the inflation of the years following World War II have dried up sources of private wealth. New endowments of major size are almost non-existent and the existing endowment funds of universities buy only half what they did before. Thus, more and more, the medical schools have had to raise tuition and make the prospective medical student pay a higher share of the total cost. Again it takes a wealthy student, or a boy from a well-fixed family, to contemplate a medical education.

What can be done about it? The Washington Bureau of the A.M.A. calls attention to proposals that the Federal Government establish scholarships to help the individual finance his medical training. Scholarships would continue at $800 a year for four years to those who could qualify and can give proof of need. All direct scholarships would end after four years but the holder of the scholarship would be eligible to apply for a loan at $600 a year for another four years. Repayment of the $2,400 loan would start four years after the last loan and be paid in full within ten years.

Basic step in the plan would be for the Federal Department of Education to grant to high school graduates "certificates of scholarship" to those with high academic grades. From this list the neediest students would be selected for actual grants and the remainder would receive the certificates as a mark of scholastic honor, though they could not qualify on the basis of need.

What action Congress may take on this proposal when it assembles in January is uncertain. The costs may be one stumbling block.

Here are estimated expenses under the plan:

$ 32 million—first year
$ 64 million—second year
$ 96 million—third year
$128 million—fourth and subsequent years.

Whether the Federal government or private, individual enterprise should make the grants and thus exert control is a matter of concern to all who see the widening scope of the centralized Federal government and its implications.

That is why every physician should actively support the American Medical Education Foundation in its work of raising money for medical education. If individual effort fails big government is all too ready, as in the past, to step in and take over. If you have not already made your gift to the American Medical Education Foundation do so today through your county medical society.

ACCIDENT AND HEALTH INSURANCE

Each year the Health Insurance Council makes an annual survey* of the accident and health insurance coverage in the United States. This council consists of nine associations in the insurance business, which in turn are made up of companies writing health coverages. The report is intended to provide information for medical groups and hospital administrations about health and accident insurance and this particular report provided figures of interest to physicians.

Up to the late 1930's most health and accident insurance was of the weekly indemnity type. Hospital insurance got its impetus about twenty years ago from the organization of the Blue Cross, and the growth of hospital insurance the past ten years has been phenomenal. Voluntary hospital insurance last year covered 86 million persons. It is perhaps not generally appreciated that insurance companies, by means of group and individual policies, provide for 44 million or over half of this total, whereas Blue Cross and plans sponsored by medical societies cover about 41 million.

Insurance against surgical care got a later start than hospital insurance. Nevertheless the growth of this type of insurance has been just as phenomenal, until today about 65 million individuals are protected against the need for surgical care. Group and individual policies carried by insurance companies total 42 million whereas Blue Shield protects about 24 million against this hazard.

Insurance against medical expenses has been more difficult to institute. Many insurance companies and organizations sponsored by individual societies have

*Accident and Health Coverage in the United States as of December, 1951. The Health Insurance Council, 488 Madison Ave., New York 22, New York.

lost heavily by carrying this type of insurance. Restricted policies, however, are available, and about 12 million individuals are now protected by private companies and 14 million by blue Shield. The total of 27,723,000 now covered represents a 28 per cent increase over the 21,589,000 covered at the end of the year 1950.

These figures all refer to voluntary hospital, surgical and medical care insurance. In addition, 39,702,000 of the 61,000,000 employed civilians are protected by voluntary insurance against loss of income due to disability. This protection is largely for off-the-job protection and three-fourths of it is written by insurance companies. Workman's Compensation cares for most of the on-the-job income loss.

To illustrate the growth of voluntary health and accident insurance, some 9 million additional individuals were added in 1951 to the list of those protected by hospital insurance; about 9 million to those carrying surgical risk insurance; and 6 million to those carrying medical care insurance.

From these figures are omitted those covered by Workmen's Compensation laws; total and permanent disability benefits included in many life insurance policies; 4,800,000 commercial accident policies providing disability indemnity for injuries; 9,500,000 group accidental death and dismemberment insurance policies; commercial accident policies covering travel hazards numbering 8,000,000; complete medical care for the armed forces and persons in public institutions, and medical care and pensions for war veterans.

It would seem that the American people are health-insurance-minded, have realized the advisability and almost necessity of carrying insurance against the cost of sickness and accidents, and prefer to carry their own insurance instead of adopting compulsory government insurance. It will be most interesting to observe the growth of this type of insurance in the future years and just what percentage of the population ultimately will be covered.

NEW COMMISSION ON HOSPITALS

Ceremonies marking the end of a 35 year period in which the American College of Surgeons held sole responsibility for setting standards for the nation's hospitals will be held Saturday, December 6, when the plan will be transferred to the new Joint Commission on Accreditation of Hospitals in a program at the John B. Murphy Auditorium, 50 East Erie Street, Chicago, at 4 p. m.

Principal speaker will be Senator Lister B. Hill of Alabama, co-sponsor of the Hill-Burton Act, instrumental in constructing over 1000 hospitals especially in rural communities. Dr. Evarts A. Graham, chairman of the Board of Regents of the College, will turn the new program over to Dr. Gunnar Gundersen, first Chairman of the Commission. His Eminence, Cardinal Stritch, will deliver the Invocation.

From now on the American College of Physicians, American College of Surgeons, American Hospital Association, American Medical Association, and Canadian Medical Association will share responsibilities of the program. Proposal for the formation of the Commission was initiated by the College in the recognition that not only surgeons but other members of organizations concerned with medical care in hospitals should participate in the establishment and enforcement of hospital standards. This combination of organizations constitutes an important milestone in the development of health services for the American people.

Since the American College of Surgeons began its survey of hospitals in 1917, it has spent approximately two million dollars from dues paid by its Fellows for the operation of a hospital inspection and approval system. Its contribution to the improvement of the quality of medical service in American hospitals is generally recognized.

Of this strengthened and expanded program Dr. Gundersen says, "It is a voluntary movement, representing the best thinking and the best inspiration of five of the most powerful groups in the world dealing with health. We recognize what this will mean to the care of the sick and the injured, of Canada and the United States. We realize that this may eventually mean much to the care of the sick and the injured the world over. If the duties are discharged well, the benefits through our profession, through our hospitals, and for our civilization are unreckonable."

Effectiveness of the program of grading hospitals can be seen from these impressive figures: in 1918 out of 692 hospitals surveyed only 83 (12.9%) were approved. Out of 4,111 hospitals surveyed by 1951, 3,352 were approved (81.5%).

Headquarters for the new Joint Commission on Accreditation of Hospitals are at 660 North Rush Street, Chicago 11, Illinois. Dr. Edwin L. Crosby, former Director of Johns Hopkins Hospital in Baltimore, is Executive Director of the Commission.

TEN POINT PROGRAM
OF THE
SOUTH CAROLINA MEDICAL ASSOCIATION

1. Cooperation

To promote closer cooperation and better understanding between all agencies, groups and individuals concerned with providing and improving medical care for the people of South Carolina.

2. Extension of Medical Care

To study constantly the need and availability of medical care in each county of the State and in the State at large.

To promote plans for providing or improving medical care where is a need, particularly in the rural areas.

3. Pre-Paid Hospital and Medical Care

To make voluntary pre-paid hospital and sickness insurance available to all the people of the State (through Blue Cross, Blue Shield, and commercial insurance policies), and to promote the widespread purchase of such insurance.

4. Care of Indigent

To work with local county and state agencies, and with philanthropic organizations, toward securing good medical care for the indigent.

5. Public Health

To support the South Carolina State Board of Health in its broad program of preventing diseases and of safeguarding the health of our people.

6. Health Councils

To support the State Health Council in its announced program. To sponsor the formation of a County Health Council in every county of the state, and to encourage our members to support and to work with these organizations.

7. Hospitals

To promote the expansion of present hospital facilities and the building of new hospitals—where there is a definite need.

To strive for highest standards of professional care in the hospitals in the State.

8. Medical Colleges

To support the Medical College of the State of South Carolina and to bend our efforts toward keeping its standards of education on a par with other medical colleges throughout the country.

To promote good nursing education and good nursing care throughout the State.

9. Education of the Public

To acquaint the citizens of the State with regard to the problems of medical care in existence today, to inform them as to what is being done to solve these problems, and to advise with them as to further plans for securing better health and better medical care for the people of South Carolina.

10. Political Medicine

To prevent political control or domination of medical practice or of medical education.